



King County

Solid Waste Division

Department of Natural Resources and Parks

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January 29, 2010

TO: Bill Lasby, Supervisor, Solid Waste & Vector Nuisance Program, Public Health –
Seattle & King County

FM: Anne Holmes, Supervising Engineer

RE: Vashon Island Closed Landfill
Application for Reissuance of Municipal Solid Waste Handling Permit

The purpose of this memorandum is to transmit the resubmittal of the permit application based on comments received on the original submittal from Public Health Seattle and King County (Public Health) and Washington State Department of Ecology (Ecology), dated December 23, 2008. Pursuant to the provisions of the Washington Administrative Code (WAC) Chapter 173-351-730(4), the King County Solid Waste Division (KCSWD) has prepared the enclosed Permit Reissuance Application for the Vashon Closed Landfill.

The enclosed *Table of Contents* provides an outline of the contents of this Permit Application.

We appreciate your cooperation through this permitting process and look forward to working with you towards the reissuance of the Vashon Island Closed Landfill Municipal Solid Waste Handling Permit. If you have any questions regarding these documents, please call me at extension 6-4424 or Dan Swope at extension 6-8456.

DJS:er

DS2/Lasby – Transmittal of Permit Reissuance Application – Final 122309

Enclosures

cc: Claude Williams, Air Pollution Engineer, Puget Sound Air Pollution Control Agency
Peter Christensen, Supervisor, Washington State Department of Ecology,
Northwest Regional Office
Kevin Kiernan, Division Director, Solid Waste Division (SWD)
Victor O. Okereke, Engineering Services Manager, SWD
Pam Badger, Environmental Programs Managing Supervisor, SWD

ENCLOSURES

1. Vashon Inspection Survey Reports, 2002 – 2008 (updated)
2. Summary of 30-year Costs for Vashon Landfill Post-Closure
3. Copy of 2004 Vashon Landfill Post-Closure Permit

MUNICIPAL SOLID WASTE LANDFILL

VASHON ISLAND CLOSED LANDFILL - PERMIT REISSUANCE APPLICATION

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**MUNICIPAL SOLID WASTE LANDFILL
VASHON ISLAND CLOSED LANDFILL - PERMIT REISSUANCE APPLICATION**

Description of Proposal This application is for the reissuance of the Vashon Island Closed Landfill Permit previously issued on July 22, 2004 and with a noted expiration date of December 31, 2008. This application is being submitted in accordance with the Washington Administrative Code (WAC) Section 173-351-730 (4).

Proponent King County Solid Waste Division

Site Address 18900 Westside Highway SW, Vashon, Washington

Legal Description Southwest 1/4 of southwest 1/4 less highway together with south 1/2 of northwest 1/4 of southwest 1/4 lying northerly & easterly of northerly & easterly margin of highway together with west 280 ft of southwest 1/4 of northeast 1/4 of southwest 1/4 all located in 36-23-02 aka portion of King County Legal Lot L07M0018 dated 05-03-07

Permit Fees An Interfund Transfer Voucher for \$ 693.00 will be transmitted separately.

Property and Facility Owner of Record King County

Operator of Record King County Solid Waste Division

Responsible Official Kevin Kiernan, Division Director, Solid Waste Division

Contact Person Anne Holmes, Supervising Engineer
King County Solid Waste Division
201 South Jackson Street, Suite 701
Seattle, WA 98104-3855
Telephone No. 206-296-4424
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Anne Holmes, P.E.
Preparer of Application

2-9-10

Date



Signature

PERMIT COMPLIANCE SUMMARY PER WAC 173-351-730 (4)
(Updated September 30, 2008)

The following summary is provided to describe modifications that have occurred during the current permit cycle and others scheduled for implementation during the reissued permit cycle.

PART A – REVIEW OF THE ORIGINAL APPLICATION AND PERMIT

SECTION I – CHANGES TO PERMITTEE AND ADMINISTRATIVE INFORMATION

Updated administrative information is provided in the enclosed Permit Application Page.

SECTION II – CHANGES TO AUTHORIZATION

No changes proposed.

SECTION III – CHANGES TO DEMONSTRATIONS

- **Location Restrictions**

No changes.

- **Other Locational Restrictions**

No changes.

SECTION IV – CHANGES TO DESCRIPTION OF PERMITTED UNITS, SCOPE OF PERMIT, AND AUTHORIZED ACTIVITIES

A. MSWLF Unit Name: Vashon Island Closed Landfill – Phase I

Rules Applying to this Unit: No change.

Types of Waste Authorized: No change.

Design Volume: No change.

Earliest Authorized Start of Activity: No change.

Closure Date: **1988**

SECTION IV – CHANGES TO DESCRIPTION OF PERMITTED UNITS, SCOPE OF PERMIT, AND AUTHORIZED ACTIVITIES (continued)

B. MSWLF Unit Name: Vashon Island Closed Landfill – Phase II

Rules Applying to this Unit: No change.

Types of Waste Authorized: No change.

Authorized Design Volume: No change.

Earliest Authorized Start of Activity: No change.

Closure Date: December 31, 2002

SECTION V – CHANGES TO PRE-CLOSURE REVIEW AND CESSATION OF CONSTRUCTION ACTIVITIES

- No changes.

SECTION VI – CHANGES TO POST CLOSURE OPERATION AND MAINTENANCE PLAN

A. Minimum Standards for Performance

1. Groundwater – No changes.

2. Surface Water – No changes.

B. Explosive Gas - No changes.

C. Air - No changes.

D. Disease Vectors - No changes.

E. Run-on /Run-off Control Systems - No changes.

F. Records - No changes.

G. Maintenance of Monitoring Systems - No changes.

SECTION VII - CHANGES TO GROUNDWATER MONITORING SYSTEMS AND CORRECTIVE ACTION

- **Changes to the Hydrogeologic Report**

The Hydrogeologic Report Update was submitted to agency in December 2004. The Update redefined the conceptual hydrogeologic model for the landfill.

- **Changes to the Groundwater Monitoring Program**

- Public Health and Ecology Notifications – No changes.
- Groundwater Assessment Monitoring Program – Submitted Assessment Monitoring Plan April 2003
- Environmental Sampling and Analysis Plan (SAP) – Submitted draft SAP to agency in October 2004. Revised draft submitted December 2006.
- Environmental investigation reports: Volatile Organic Compound (VOC) Sampling and Testing Results – Vashon Landfill Closure Project submitted July 2004, Potential Effects of Landfill Gas and Leachate on Vashon Landfill Groundwater and Springs and Vashon Island Closed Landfill Environmental Evaluation submitted March 9, 2006
- Vashon Island Landfill Hillslope Report for Scope of Work #1 submitted August 2006.

SECTION VIII - CHANGES TO OTHER ENVIRONMENTAL MONITORING REQUIREMENTS

- A. Surface Water – No change.
- B. Leachate – No change.
- C. Landfill Gas – No change.

SECTION IX - CHANGES TO POST-CLOSURE PLANS

No changes.

SECTION X - CHANGES TO FINANCIAL ASSURANCE FOR POST-CLOSURE AND CORRECTIVE ACTION

No changes in the post-closure criteria. The mechanism employed is the “Reserve Account” per WAC 173-351-600(5)(I).

SECTION XI – CHANGES TO GENERAL CONDITIONS

No changes.

SECTION XII – CHANGES TO THE REPORTING REQUIREMENTS

No changes.

SECTION XIII – CHANGES TO COMPLIANCE REQUIREMENTS

• Groundwater Monitoring Compliance and Corrective Action

Task 1 - Hydrogeologic Investigations

- Submit work plan for the drilling, abandonment and replacement of wells.
- Complete the installation of wells and submit all drilling reports.
- Submit complete draft of revised hydrogeologic report which includes information of the new wells.
- Submit final revised hydrogeologic report, submitted December 2004.

Completed all items December 2004.

Task 2 - Assessment Monitoring Program

- Submit complete draft of an assessment monitoring program submitted April 2003.
- Submit final assessment monitoring program.

Current Status: Final transmitted as a section in the revised draft SAP, December 2006.

Task 3 - Evaluate Potential Landfill Gas Impacts

- Submit work plan for landfill gas investigation.
- Complete landfill gas investigation.
- Submit final landfill gas investigation report as a portion of the technical memorandum in Task 4.

Submitted final VOC Sampling and Testing Results Report July 2004.

Task 4 - Evaluate Existing Environmental Control Systems and Monitoring Program

- Submit complete draft technical memorandum to Public Health and Ecology.
- Submit final technical memorandum to Public Health and Ecology, submitted March 2006.

Completed

Task 5 - Sampling and Analysis Plan (SAP)

- Submit SAP for the current monitoring program, submitted March 2003.
- Submit complete draft SAP that includes changes to the groundwater monitoring plan based on the results from the newly installed groundwater monitoring wells, the assessment monitoring program and the statistical analysis process, submitted October 2004.

Current Status: The revised Draft SAP transmitted on December 2006 responded to comments sent by Public Health and Ecology in March 2006. Final SAP to be completed by June 2010.

Task 6 - Submit Annual Reports

- Submit complete final 2002 annual report including all data, findings, conclusions and recommendations for all four quarters of calendar year 2002.
- Submit complete final annual reports to Public Health and Ecology including all data, findings, conclusions and recommendations for all four quarters of each subsequent year by April 1st of each year immediately following the year being reported.

Completed

Task 7 – Post-Closure Operations and Maintenance (O&M) Plan

- Submit complete draft Post-Closure O&M Plan.
- Submit final Post-Closure O&M Plan, submitted December 2005.

Completed

Task 8 – Financial Assurance

- Submit annual post-closure cost estimate and documentation of financial assurance mechanism being used with the Annual Report, submitted March 2004.

Task 9 – Certification of Construction.

- Provide final closure record drawings and certification of construction signed by an independent registered professional engineer verifying that landfill closure has been completed in accordance with the approved final engineering plans and the closure plan, submitted August 2003.

PART B – REVIEW OF INFORMATION COLLECTED FROM INSPECTIONS, COMPLAINTS, OR KNOWN CHANGES IN THE OPERATIONS

B.1 - LEACHATE ACCEPTANCE CERTIFICATION

Leachate from the Vashon Island Closed Landfill is hauled to the King County Wastewater Treatment Division (KCWTD) collection system. The current permit expires on July 31, 2011. In compliance with KCWTD permit renewal requirements, the renewal application will be submitted when required. No substantive changes to the permit conditions are anticipated.

B.2 - CHANGES TO OPERATIONS PRACTICES

During the expiring permit period, the following activities were conducted at the landfill:

- Maintenance of the leachate system
- Maintenance of the landfill gas system
- Maintenance of the surface water system
- Inspections of the cover system, landfill gas system, leachate system and surface water systems. These inspections were conducted monthly by operators and annually by the responsible engineer.
- Quarterly monitoring of groundwater, surface water and landfill gas. Monitoring reports were submitted quarterly.

All of these activities are identified and frequency is established in the Vashon Island Closed Landfill Plan of Operations and Post-Closure Plan (O&M Plan).

In addition to the inspections and maintenance requirements in the O&M Plan, additional investigations have been ongoing or are being planned:

- Ongoing investigation and monitoring of the hillslope to the west of the site which includes surface water sampling and the drilling of three shallow monitoring wells. These wells were installed in December 2009 and a final report will be compiled after the three wells have had at least one year's worth of sampling data collected.
- Preparation of a contract for further groundwater investigation, consultant to start 2010.

B.3 - GROUNDWATER MONITORING RESULTS

Vashon Island Closed Landfill is underlain by a regional aquifer. Conditions present in wells in the regional aquifer show no indication of impacts attributable to landfill activities at the Vashon Island facility. The water quality in this unit is good and is believed to represent natural conditions. Private wells tested around the landfill also do not show any impacts attributable to landfill activities at the Vashon Island landfill.

There is vinyl chloride in groundwater in the southwest area of the property that exceeds the State Groundwater Criteria, in a water bearing zone between the land surface and the regional aquifer. Planned investigations in 2010 and 2011 will provide additional information and identify any necessary remediation efforts. KCSWD continues to monitor the groundwater in compliance with local and state regulations. Complete groundwater results and findings can be found in the Vashon Island Closed Landfill 2008 Annual Groundwater Data Evaluation Report.

Results and related analysis are submitted quarterly and annually to Ecology and Public Health. The most recent annual report was submitted in April 2009.

B.4 - SURFACE WATER AND METHANE MONITORING RESULTS

Surface water run-off is collected and stored onsite or treated as leachate and does not recharge groundwater at the closed landfill. There are surface expressions of the shallow groundwater zones on the west hillslope, west of the Westside Highway. There is an ongoing study by KCSWD of the hillslope to evaluate the water quality of these seeps showing detections of vinyl chloride.

Methane had previously been monitored monthly and starting in 2010 will be monitored quarterly around the perimeter of the landfill and has only had three trace detections in the past two years. Planned investigations in 2010 and 2011 will evaluate any potential connection with the generation of landfill gas and vinyl chloride detections in the groundwater.

Results and related analysis are submitted quarterly and annually to Ecology and Public Health. The most recent annual report was submitted in April 2009.

B.5 - INSPECTION REPORTS

- No significant issues were identified from periodic inspections completed during the current permit cycle. The summary table of inspection reports for 2003 through July 2008 is enclosed.
- Design, Construction, and Management of all Environmental Management Systems for surface water, air and groundwater, are governed by WAC 173-351, except for Surface Impoundments (leachate lagoons) which are regulated under WAC 173-350-330. Inspection of surface impoundments at the Vashon Island Closed Landfill are completed per schedules outlined in tables in the Vashon Island Closed Landfill Plan of Operations and Post-Closure Plan. Liner inspections are currently scheduled to be completed every five (5) years per WAC 173-350-330 (4)(b) using Contract Services. An inspection using Electro-Resistivity testing procedures was completed in 2007.

B.6 - COMPLIANCE SUMMARY

The demonstrations included above provide evidence that KCSWD is working towards compliance with the Municipal Solid Waste Handling Permit Vashon Landfill (Post-Closure) in the following areas:

- Completion of compliance tasks with the exception of an approved Sampling and Analysis Plan which is still in draft and will include the assessment monitoring program (Section XIII, Task 5);
- Compliance with maintenance schedules defined in the O&M Plan;
- Quarterly groundwater monitoring and reporting;
- Quarterly surface water monitoring and reporting;
- Quarterly gas monitoring and reporting